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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference BPCL 9884 Cog		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/03570	International filing date (day/month/year) 14.08.2003	Priority date (day/month/year) 20.08.2002	
International Patent Classification (IPC) or both national classification and IPC C08F4/64			
Applicant BP CHEMICALS LIMITED et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains Indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand 12.03.2004		Date of completion of this report 02.11.2004	
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Balmer, J-P Telephone No. +49 89 2399-8520	



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I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-12 as originally filed

Claims, Numbers

1-13 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	2,4-7
	No: Claims	1,3,8-13
Inventive step (IS)	Yes: Claims	2,4-7
	No: Claims	1,3,8-13
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

see separate sheet

Ad section V

1. Reference is made to the following documents:

D1: JOAO H.Z. DOS SANTOS ET AL: "Indenyl-silica xerogels: new materials for supporting metallocene catalysts" APPLIED CATALYSIS A: GENERAL, vol. 220, October 2001 (2001-10), pages 287-302, XP002238649

D2: J.H.Z.OS SANTOS ET AL: "Ethylene (co)polymerization with supported metallocenes prepared by the sol-gel method" POLYMER, vol. 42, 2001, pages 4517-4525, XP002259347

D3: APPERLEY, DAVID ET AL: "Silica -dimethylsiloxane hybrids- non - hydrolytic sol - gel synthesis and characterization by NMR spectroscopy" CHEMISTRY OF MATERIALS (2002), 14(3), 983-988, XP002259348

D4: HAY, JOHN N. ET AL: "Synthesis of organic-inorganic hybrids via the nonhydrolytic sol-gel process" CHEMISTRY OF MATERIALS (2001), 13(10), 3396-3403, XP002259349

D5: HAY, JOHN N. ET AL: "A versatile route to organically-modified silicas and porous silicas via the non - hydrolytic sol - gel process" JOURNAL OF MATERIALS CHEMISTRY (2000), 10(8), 1811-1818, XP002259350

2. The documents D1 and D3 disclose the preparation of silica supported metallocene catalysts for the polymerization of olefins, wherein the metallocene is grafted onto the silica via the aromatic ligand. The preparation method is a hydrolytic sol-gel method. Despite the fact that the preparation method of the supported catalyst is slightly different, the examining division considers that the modified silica with the metallocene is the same independently from the preparation method used. Accordingly present claims 8-13 are not novel over D1 or D2 with regard to article 33(2) PCT.
3. The document D5 discloses the preparation of an organic modified silica with the non-hydrolytic sol-gel method wherein iron chloride is used a catalyst (see table 1). Therefore D5 is novelty destroying for present claims 1 and 3, as iron chloride is a transition metal compound (article 33(2) PCT).
4. With regard to the cited prior art the claims 2, 4-7 are considered as novel and inventive according to Art.33(2+3) PCT.

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5. Industrial applicability is acknowledged (Art.33(4) PCT).

6. Remarks

- 6.1 In claim 1 the ligand L is not a π -bonded ligand but a σ -bonded ligand.
- 6.2 According to the different reactants used to prepare the modified silica it is not clear how the structure disclosed on page 4 can be obtained, wherein there is very much oxygen disclosed which is in opposition to the composition of the reactants...Also the formula mentioned in example 1 is not correct. Further where does all this oxygen comes from ???